



Published in final edited form as:

J Behav Health Serv Res. 2015 January ; 42(1): 3–5. doi:10.1007/s11414-014-9444-5.

Introduction to Special Section: Behavioral Health and Disasters —Planning for the Next Time

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Following the April 20, 2010 *Deepwater Horizon* oil spill in the Gulf of Mexico, an ongoing public health concern was the behavioral health (e.g., alcohol and drug abuse and mental disorders) of those living along the Gulf Coast who were affected by the spill. Hundreds of square miles of coastline in Louisiana, Mississippi, Alabama, and Florida were adversely affected by the spill. Petroleum, fishing, and tourism industries in stricken areas along the Gulf Coast suffered financial losses, and many residents lost work or feared the loss of their culture and way of life. There were further concerns about the potential health effects of the spill and the safety of chemical dispersants used to clean the shoreline in oil-exposed regions and communities.

Following a disaster, behavioral health problems are often shadows unseen by residents and officials busy addressing the problems of providing people with shelter, food, clean drinking water, and other physical needs. However, once these basic needs are “shored up,” the behavioral health concerns of emotional distress, mental illness, or substance abuse can emerge in some individuals affected by the disaster. In the Gulf Coast region struck by the *Deepwater Horizon* oil spill, incidences of these behavioral health problems were expected to be compounded by a long history of disasters in the region, including the still burgeoning effects of Hurricanes Katrina and Rita and other major storms.

This special section of the *Journal of Behavioral Health Services & Research* was proposed as a mechanism for gathering well-developed research that characterizes what is known about behavioral health in the face of oil spills and other disasters and to identify gaps in knowledge of the mental health, emotional well-being, and substance misuse patterns that emerge in communities hit by disasters. Addressing three questions guided selecting content for this special section: (1) What have we learned from recent disasters, such as the *Deepwater Horizon* oil spill, about the specific factors that most affect behavioral health in the wake of such events? (2) What types of investigative methods appear to be most successful or show promise in measuring the behavioral health consequences of disasters on

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Conflict of Interest There are no conflicts of interest.

the affected population? and (3) How can this knowledge be applied to advancing behavioral health services and research?

In the first paper, Gould et al.¹ summarize the results from two large-scale, population-based surveys conducted by the U.S. Department of Health and Human Services' (HHS) Substance Abuse and Mental Health Services Administration (SAMHSA) and the Centers for Disease Control and Prevention (CDC). The authors note there is generally an expectation that behavioral health problems will increase in communities following a disaster. Past research related to the aftermath of the *Exxon Valdez* oil spill in Alaska found increases in rates of anxiety disorders, posttraumatic stress disorder (PTSD), and depression following the spill. In another kind of disaster, Hurricane Katrina, there was little evidence of pre-post changes in behavioral health in the general population. However, among persons displaced from their homes by the storm, there were significantly higher rates of substance use, binge alcohol use, and serious psychological distress as well as depression.

In the instance of *Deepwater Horizon*, SAMHSA and CDC surveys found only modest or minimal changes in behavioral health at the aggregate level before and after the spill. This prompted the authors to conclude that adverse effects of the spill on behavioral health were not as widespread as expected among persons in the Gulf Coast states affected by the oil spill. However, the authors noted there is a data gap resulting in an inability to analyze subpopulations that may have been at greater vulnerability than the general populace. Moreover, it was not possible to assess the severity of symptoms among those who did suffer behavioral health effects because of the oil spill.

In the second article, Fan et al.² examine the individual and community-level determinants of mental and physical health after the Gulf oil spill. Using data from a community-representative sample of residents of four Gulf Coast states affected by the spill, the authors found that differences in individual characteristics (e.g., demographics, health characteristics, resilience, and social and emotional support) and direct or indirect exposure to the disaster were the drivers of the individual-level variation in post-spill mental and physical health outcomes. Direct exposure to the oil itself was the most important determinant of health. Community-level characteristics (e.g., including income inequality, crime, and level of resources) were not found to be significantly associated with any of the health indicators of interest. Thus, with findings consistent with studies of previous oil spill disasters, the authors conclude that persons who are directly affected by an oil spill should be the primary focus of any public health intervention effort.

The next two papers (Abramson et al.³ and Schultz et al.⁴) describe a framework and a set of tools that provide useful insights for communities about how to promote personal resilience and reduce behavioral health consequences following disaster events. Their models further provide frameworks that community planners and others can use to develop and enhance response resources before disaster strikes. Abramson and colleagues³ suggest use of the Resilience Action Framework model that builds on research to enhance planning for access to social resources. The model addresses the important issue of how governmental and community organizations can work together to improve people's access to post-disaster social resources and thereby activate and sustain resilience capabilities. Understanding the

mechanisms by which access to social resources facilitate resilience can lead to developing better prevention and early intervention programs to increase both individual and communal resilience. In this model, the attainment of resilience is proposed as a process rather than an outcome.

Shultz et al.⁴ demonstrate the use of the trauma signature (TSIG) methodology to examine the behavioral health consequences related to the *Deepwater Horizon* oil spill. Grounded on the Disaster Ecology Model, TSIG is based on the premise that each disaster leaves an imprint or “signature” on the affected population based on exposure to hazards, loss of infrastructure, and permanence of change related to the event. Understanding this signature can serve as a key predictor of needs for behavioral health support within the affected population. Because TSIG is performed in “real time,” as the disaster is unfolding, results can be used to tailor responses to the disaster’s defining features. This tool qualitatively and quantitatively characterizes specific risks and associated potential outcomes, thus providing communities with greater clarity for planning approaches to resolving post-disaster behavior health challenges.

In the final two articles^{5,6} in this special section, the authors consider how local, state, and federal agencies; policy makers; and health care providers can proceed to improve surveillance strategies and target interventions for communities. Teich and Pemberton⁵ note the lack of widespread behavioral health findings in the two large HHS surveillance studies identified earlier, as well as studies of other disasters. Questions that emerge include the following: (1) Have there been less dramatic physical and environmental effects than were predicted? (2) Was the timely mobilization of intervention resources sufficient to reduce behavioral health issues? (3) Could there be subpopulations that have not been adequately measured due to methodological or analytic reasons? and (4) Does the focus on prevalence hide increased severity of symptoms among those with preexisting behavioral health conditions?

Palinkas⁶ emphasizes the pressing need for disaster behavioral health researchers to narrow the gap between the research they conduct and the practices that must be enacted to effectively prevent and mitigate suffering due to behavioral health distress. The author introduces an array of programs, policies, and practices that could potentially prevent and mitigate negative behavioral health effects associated with disasters. He goes on to offer suggestions for the next generation of disaster behavioral health researchers on ways to integrate current efforts to understand the epidemiology of behavioral health problems in the context of evaluating and implementing effective services. In particular, this paper highlights using the power of academic and community partnerships to improve understanding of resilience as well as for developing the most beneficial services for those with the greatest vulnerability to long-term behavioral health problems.

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Implications for Behavioral Health

The six articles in this special section of The Journal of Behavioral Health Services & Research build on and extend the understanding of the behavioral health effects of disasters such as the *Deepwater Horizon* oil spill. Collectively, they present the results of behavioral health studies following the spill and identify tools that can be useful for anticipating post-disaster behavioral health challenges. The hope is these articles will become a resource for researchers, public health policy makers, health care providers, and the leaders of communities affected by disaster events.